

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001735**Date Inspected:** 09-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Xu Xian Ping**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower/OBG**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Sherri Brannon arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China to periodically monitor welding and Quality Control (QC) functions. While on site the QA Inspector observed and/or discovered the following.

**Bay 1 - OBG Deck Panel (U-Rib diaphragm): NDT (VT/MT):**

QA Inspector Brannon randomly observed ZPMC magnetic particle (MT) technician Mr. Zhou Dong Yun performing (MT) on fillet weld for SP077-001-016 (u-rib diaphragm) and accepted the fillet weld. QA Inspector Brannon performed visual inspection (VT) and magnetic particle testing (MT) on the fillet weld for DP077-001 weld joint #016 (u-rib diaphragm). See Caltrans Magnetic Particle Test Report, TL-6028 dated March 9, 2008 for additional information.

**Bay 2 - Tower**

QA Inspector Brannon randomly observed ZPMC personnel C & C torch cutting 75% natural and 25% oxygen for interior splice plate for the 60 Meter elevation, piece # SA16 and interior splice plate for the 45 Meter elevation piece #263.

**Bay 2 - OBG Deck Panel: NDT (UT):**

QA Inspector Brannon randomly observed ZPMC Ultrasonic testing (UT) technician's Mr Liming and Mr. Xue Hairong performing (UT) on CJP welds for DP053-001-011, DP049-001-011, DP008-001-007, DP002-001-009 and DP006-002-009 weld joint #016 (u-rib diaphragm) and accepted the CJP welds.

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### Bay 3 - OBG wide beams (splice):

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Li Shuliang ID#048810 splice welding at weld wide beam for SP332-001-004. Mr. Li was observed welding in the 3G (vertical) position utilizing flux cored arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand Supercored 71H, class E71T-1 semi automatic. QA Inspector Brannon observed the ZPMC QC Inspector Mr. Xu Xian Ping verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector Brannon also verified the preheat temperature to be a minimum of 10°C and measured the welding parameters to be 201 amps, 25.8 volts, a travel speed of 114 mm/min and a shielding gas flow of 18L/min. Welding parameters measured by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2233-B-U2-F, Revision 1.

### Bay 3 - OBG wide beams (splice):

QA Inspector Brannon randomly observed ZPMC qualified welder Mrs. He Yumei ID#0048625 splice welding at weld wide beam for SP305-001-007. Mrs. He was observed welding in the 3G (vertical) position utilizing flux cored arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand Supercored 71H, class E71T-1 semi automatic. QA Inspector Brannon observed the ZPMC QC Inspector Mr. Xu Xian Ping verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector Brannon also verified the preheat temperature to be a minimum of 10°C and measured the welding parameters to be 202 amps, 26.0 volts, a travel speed of 115 mm/min and a shielding gas flow of 18L/min. Welding parameters measured by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2233-B-U2-F, Revision 1.

### Bay 3 - Heat Straightening:

QA Inspector Brannon randomly observed ZPMC personnel performing heat straightening side plate SP43, SP73, and SP25. ZPMC report #HSR1(B)-230, grid 4BE, weld #041~050, weld map SP043-01, #HSR1(B)-235, grid 4BW, weld #001~012, weld map SP073-01 and #HSR1(B)-240, grid 3AW, weld #001~037, weld map SP025-01. Heat Straightening is performed by flame straightening by oxygen acetylene.

### Bay 3-OBG Side Panels Sub Assembly: NDT (VT/MT):

QA Inspector Brannon randomly observed ZPMC magnetic particle (MT) technician Mr. Zhou Dong Yun performing (MT) on on the fillet welds for SP080B-01, weld joints #013 ~ 024, SP079-01, weld joints #013 ~ 024 and BP001-01, weld joints #008 ~ 019 & #026 ~ 037 and accepted the fillet welds. QA Inspector Brannon performed visual inspection (VT) and magnetic particle testing on the fillet welds for SP080B-01, weld joints #013 ~ 024, SP079-01, weld joints #013 ~ 024 and BP001-01, weld joints #008 ~ 019 & #026 ~ 037. See Caltrans Magnetic Particle Test Report, TL-6028 dated March 9, 2008 for additional information.

### Bay 4 - Tower 43 Meter diaphragm plate (piece #SA27 to P546):

QA Inspector Brannon periodically observed ZPMC personnel carbon air arc gouging the back side of the weld joint in preparation for fill and cover passes utilizing a submerged arc welding (SAW) process. ZPMC personnel was observed using a power grinder with a sanding disk to remove the remaining carbon and burn slag after the removal of the root pass. QA Inspector Brannon observed ZPMC QC monitoring the excavation.

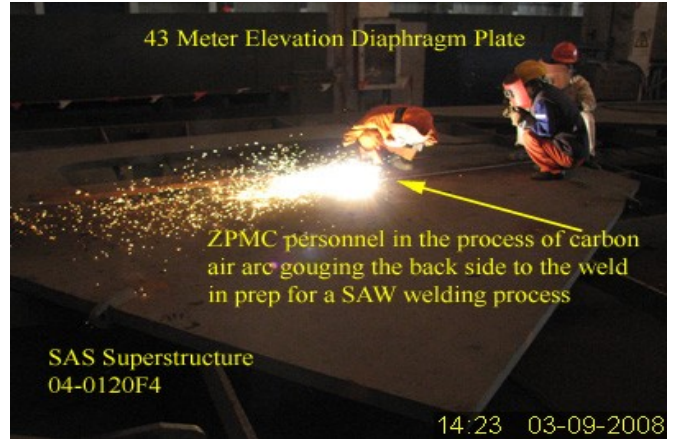
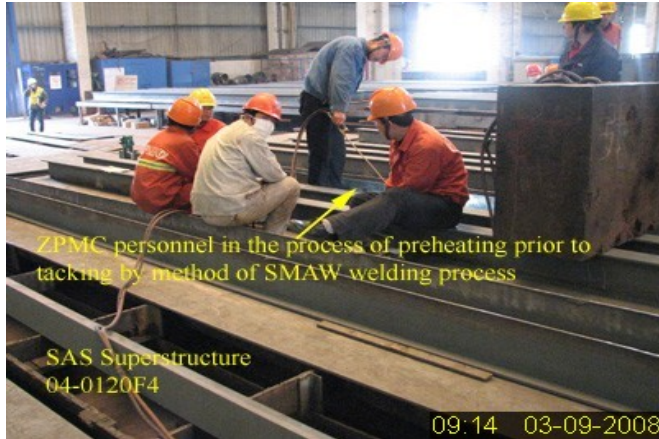
The following digital photograph below illustrates observation of the activities being performed.

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### Summary of Conversations:

No relevant conversations on this date.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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**Inspected By:** Brannon, Sherri

Quality Assurance Inspector

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**Reviewed By:** Cuellar, Robert

QA Reviewer